

What is claimed is:

1. A heart cam and damper unit comprising:

a base member having a fixed cylindrical portion and
a stopper portion;

5 a rotating member having a movable cylindrical
portion which is rotatably assembled to said fixed
cylindrical portion with a viscous fluid interposed between
said movable cylindrical portion and said fixed cylindrical
portion, and a pinion gear which rotates integrally with
said movable cylindrical portion;

10 a heart cam member which is rotatably fitted around
an outer periphery of an outwardly located one of said
fixed cylindrical portion and said movable cylindrical
portion; and

15 urging means which is interposed between said base
member and said heart cam member, and is adapted to
rotatablly urge said heart cam member toward said stopper
portion of said base member.

2. An opening/closing controlling device interposed
20 between a main body portion and a movable portion which
undergoes opening and closing action with respect to said
main body portion and is constantly urged in an opening
direction, so as to impart locking and damping action with

respect to said movable portion, wherein

a heart cam and damper unit, which comprises: a base member having a fixed cylindrical portion and a stopper portion; a rotating member having a movable cylindrical portion which is rotatably assembled to said fixed cylindrical portion with a viscous fluid interposed between said movable cylindrical portion and said fixed cylindrical portion, and a pinion gear which rotates integrally with said movable cylindrical portion; a heart cam member which is rotatably fitted around an outer periphery of an outwardly located one of said fixed cylindrical portion and said movable cylindrical portion; and urging means which is interposed between said base member and said heart cam member, and is adapted to rotatably urge said heart cam member toward said stopper portion of said base member, is installed on one of said main body portion and said movable portion through said base member,

a gear, which is meshed with said pinion gear, is provided which undergoes relative movement with respect to said heart cam and damper unit in conjunction with a movement of said movable portion, and

a pin member is provided which is engaged with and disengaged from said heart cam member in conjunction with the movement of said movable member.

3. The opening/closing controlling device according to
claim 2, wherein

 said main body portion is a housing,

5 said movable portion is a cover which is rotatably
mounted to said housing so as to open and close an opening
of said housing,

 said heart cam and damper unit is mounted to said
housing through said base member,

10 said gear which is interlocked with a rotation of
said cover is meshed with said pinion gear of said heart
cam and damper unit, and

 said pin member which moves in conjunction with the
rotation of said cover is engaged with and disengaged from
said heart cam member.

15

4. The opening/closing controlling device according to
claim 2, wherein

 said main body portion is a casing,

20 said movable portion is a drawer member which is
slidably drawn into and out of said casing,

 said heart cam and damper unit is mounted on one of
said casing and said drawer member through said base
member,

25 a rack, which is meshed with said pinion gear,
undergoing relative movement with respect to said heart cam

and damper unit in conjunction with the movement of said movable portion is provided on another one of said casing and said drawer member, and

5 a pin member is provided which is engaged with and disengaged from said heart cam.

5. A heart cam and damper unit comprising:

 a base member having a fixed cylindrical portion and a stopper portion;

10 a rotating member having a movable cylindrical portion which is rotatably assembled to said fixed cylindrical portion with a viscous fluid interposed between said movable cylindrical portion and said fixed cylindrical portion, and a pinion gear which rotates integrally with
15 said movable cylindrical portion;

 a heart cam member which is rotatably fitted around said fixed cylindrical portion; and

 a spring which is interposed between said base member and said heart cam member, and is adapted to rotatably
20 urge said heart cam member toward said stopper portion of
 said base member.

6. The heart cam and damper unit according to claim 5,

 wherein said heart cam member is supported between
25 said base member and an annular portion of said movable

cylindrical portion.

7. The heart cam and damper unit according to claim 6,
wherein a circular first recessed portion is provided
5 on a surface of said heart cam member which faces said base
member, and

a part of said spring is fit in said first recessed
portion.

10 8. The heart cam and damper unit according to claim 6,
wherein a circular second recessed portion is
provided on a surface of said base member which faces said
heart cam member, and

a part of said spring is fit in said second recessed
15 portion.

9. The heart cam and damper unit according to claim 7,
wherein a circular second recessed portion is
provided on a surface of said base member which faces said
20 heart cam member, and

a part of said spring is fit in said second recessed
portion.

10. The heart cam and damper unit according to claim 5,
25 wherein said base member has a fixing portion for

fixing said opening/closing controlling device to a member to be fixed, and

 said heart cam member is disposed not to overlap with said fixing portion.

5

11. The heart cam and damper unit according to claim 6,
 wherein said base member has a fixing portion for
fixing said opening/closing controlling device to a member
to be fixed, and

10 said heart cam member is disposed not to overlap with
said fixing portion.

12. The heart cam and damper unit according to claim 7,
 wherein said base member has a fixing portion for
15 fixing said opening/closing controlling device to a member
to be fixed, and

 said heart cam member is disposed not to overlap with
said fixing portion.

20 13. The heart cam and damper unit according to claim 8,
 wherein said base member has a fixing portion for
fixing said opening/closing controlling device to a member
to be fixed, and

 said heart cam member is disposed not to overlap with
25 said fixing portion.

14. The heart cam and damper unit according to claim 9,
wherein said base member has a fixing portion for
fixing said opening/closing controlling device to a member
5 to be fixed, and
said heart cam member is disposed not to overlap with
said fixing portion.